

REMARKS

In the Office Action dated August 4, 2008, claims 1, 3-9 and 11-16 were rejected under 35 U.S.C. §103(a) as being unpatentable over published PCT Application WO 02/281143 A2. Since that reference is in the German language, Applicants will provide citations in the present response to the corresponding United States patent, which is United States Patent No. 7,020,296. Both references will be referred to as "Niederdrank."

In substantiating the rejection based on Niederdrank, the Examiner acknowledged that the Niederdrank reference does not disclose calculating a transfer function of the first hearing aid device, and basing the parameters of the second hearing aid device on the transfer function of the first hearing aid device. The Examiner took "official notice" that both the concepts and advantages of calculating the transfer function of audio signals are well known in the art. The Examiner therefore stated it would have been obvious to calculate the transfer function of the first hearing aid device of Niederdrank and to transmit that transfer function to the second hearing aid device, since the first hearing device in the Niederdrank reference already transmits the settings to the second hearing aid for the benefit of analyzing the input-output relation of the signal.

These statements of the Examiner are respectfully traversed.

The Niederdrank reference is concerned with operating a hearing aid system having at least two hearing aid devices, each operating according to a hearing program. As is common, each hearing aid device has a number of hearing programs stored therein, each of which is appropriate for a particular acoustic situation. When a single hearing aid device is used, the ability of the hearing aid to adapt itself

automatically to different audio situations is highly beneficial. When a hearing aid system includes two such devices, however, it is possible that, because the devices are respectively situated at the ears of the person wearing the hearing aid, each device may detect a slightly different acoustic situation, and thus the result may occur that one of the two hearing aids selects a hearing program that is appropriate for the hearing situation that is currently being detected by that hearing aid, but the other hearing aid may detect a slightly different audio situation, as a result of being located at the opposite ear of the patient, and thus may select a different hearing program. Thus, in such a binaural hearing aid system, it may occur that the two hearing aids in the same system are simultaneously operating with different hearing programs thereby confusing the patient and providing unacceptable hearing assistance.

In order to avoid this situation from occurring, in the Niederdrank reference the *parameters of the acoustic field* in which the first hearing aid is situated are detected or identified, as explained at column 4, lines 35-38. Instead of the other hearing aid performing its own, separate audio situation detection, these parameters detected by the first hearing aid are transmitted to the second hearing aid (as explained at column 4, lines 51-54). It is then assured that both hearing aids will select the same hearing program, because both hearing aids are selecting the appropriate hearing aid program based on the same detected acoustic field parameters.

Therefore, there is no analysis that takes place in this context in the first hearing aid device, as set forth in independent claims 1 and 9 of the present application.

The Examiner cited column 4, lines 16-25 of Niederdrank (presumably the aforementioned United States patent, since the published PCT application does not include columns), as, according to the Examiner, disclosing “automatically analyzing a first hearing device that produces an analysis result.” As noted above, although the aforementioned procedure takes place in a “single analysis unit 14,” this “analysis” is not an analysis of any parameter or operational feature of the first hearing device itself, but is merely an analysis (i.e. a detection) of the *acoustic field characteristics* in which the first hearing aid device is situated. This is made clear by the description of the type of acoustic field characteristics that are analyzed or detected, all of which relate to parameters of an external acoustic field, rather than parameters of the hearing aid device itself (column 4, lines 38-42). As stated at column 4, lines 45-47, the acoustic field characteristics that are *thus identified* are deposited in a memory area 15A of a memory 15 of the hearing aid 1.

As stated in the next paragraph, beginning at column 4, line 48 of the Niederdrank reference, it is these acoustic field characteristics that are then transmitted to the hearing aid 2 (column 4, lines 48-54).

Therefore, since the detection of these acoustic field characteristics has nothing whatsoever to do with the individual components of either of the hearing aids 1 or 2 in the Niederdrank reference, but merely identifies the audio environment in which the hearing aid 1 happens to be situated, the concept of a “transfer function” is meaningless in that context. A transfer function describes in mathematical terms the relationship between the input and the output of the particular electronic component, as extensively discussed, and substantiated by the documentary evidence, in Applicants’ previous response. Those of ordinary skill in the field of acoustics and

hearing aid design know that the collection of characteristics described in the Niederdrank reference as being encompassed among the “acoustic field characteristics” are not and cannot be described by a transfer function, because the concept of a “transfer function” applies only to a particular discrete component, and does not even have any meaning in the context of describing a field. This is clearly why, as noted by the Examiner, in this context the Niederdrank reference does not disclose calculating a transfer function of the first hearing aid device. For the purpose of the information that is transferred between the hearing aids 1 and 2 in the Niederdrank reference (namely the transfer of information describing acoustic field characteristics), the concept of a transfer function is completely irrelevant and inapplicable.

In this regard as well, Applicants respectfully submit the Examiner’s characterization of the “official notice” taken by the Examiner is not only incorrect but also inappropriate. The Examiner stated that official notice is taken both that the concepts and advantage of calculating the transfer function of audio signals are well known in the art. Applicants expressly dispute that “calculating the transfer function of audio signals” is even a meaningful description of anything that is “well known in the art.” As noted above, and as supported by Applicants’ previously-submitted documentary evidence, a “transfer function” does not apply to a signal, but applies to a component to which a signal is supplied. By knowing the transfer function of a component, and by being able to mathematically describe an input signal to that component, the output signal can then be calculated. Conversely, if an output signal of a component is known in mathematical terms, the input signal that produce that

output signal can be calculated by reverse calculation, by also making use of the transfer function of the component.

If the Examiner is intending to take “official notice” of some fact, care must be taken that the fact is actually correctly stated, and is consistent with the knowledge or use of that fact that is actually known in the art. Applicants respectfully submit the Examiner has done neither in taking the aforementioned official notice, and it is only by this incorrect characterization of and reliance on such “official notice” that the Examiner been able to formulate the aforementioned rejection under 35 U.S.C. §103(a). If the Examiner took correct “official notice” of the concept of a transfer function, Applicants submit this would encompass the facts that are exemplified by the documentary evidence submitted with Applicants’ previous Response. Clearly the use of transfer functions has many benefits in the analysis of all types of signals, including audio signals, but simply having knowledge of these benefits does not provide any teaching or suggestion whatsoever to calculate the transfer function of a component in a first hearing aid device and to transmit the calculated transfer function from that first hearing aid device to another hearing aid device, as set forth in the claims of the present application.

There are many hundreds, if not thousands, of ways that two hearing aid devices can be made to operate in a synchronized or coordinated manner, and there is no teaching or suggestion in the Niederdrank reference, nor elsewhere in the prior art of record, to make use of calculation of a transfer function of one of the hearing aid devices for that purpose.

Applicants therefore respectfully submit that the Examiner has not only made improper use of taking “official notice” in substantiating the rejection under 35 U.S.C.

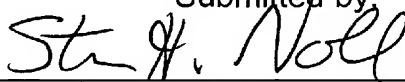
§103(a), but also submit that, even if the proper scope were taken by "official notice" of the knowledge of transfer function possessed by those of ordinary skill in the field of hearing aid design, this still would not be a proper basis for modifying the Niederdrank reference under the provisions of 35 U.S.C. §103(a) to substantiate a rejection of claims 1 and 9 of the present application.

Claims 3-8 and 11-16 add further method steps, or further structure, to the non-obvious method and device of claims 1 and 9, respectively, and therefore none of those dependent claims would have been obvious to a person of ordinary skill in the field of hearing aid design, under the provisions of 35 U.S.C. §103(a), based on the Niederdrank reference, for the same reasons discussed above in connection with claims 1 and 9.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Submitted by



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